



August 18, 2006

**DESIGN MEMORANDUM No. 06-06**  
**TECHNICAL ADVISORY**

**TO:** All Design, Operations, and District Personnel, and Consultants

**FROM:** /s/ Anthony L. Uremovich  
Anthony L. Uremovich  
Design Policy Engineer  
Contracts and Construction Division

**SUBJECT:** Interior Diaphragms with Prestressed-Concrete Members

**REVISES:** *Indiana Design Manual Section 63-7.02*

**EFFECTIVE:** January 10, 2007, Letting

**I. Structural-Steel Interior Diaphragms**

Structural-steel interior diaphragms should be specified if interior diaphragms are required for a prestressed-concrete-members bridge. This use of structural steel instead of concrete does not affect the bridge design. Structural-steel interior diaphragms should be specified on the plans. Steel interior diaphragms are not a separate pay item. Their cost should be included in that of the concrete structural members. However, the quantities of pounds (kilograms) should be shown in the superstructure bill of materials and on the Bridge Summary sheet.

Recurring Special Provision 707-B-173, and Recurring Plan Detail 707-B-173d, both attached hereto, should be called for beginning with the January 10, 2007, letting, if steel diaphragms are detailed and are to be placed.

## **II. Reinforced-Concrete Interior Diaphragms**

If the designer determines that cast-in-place concrete interior diaphragms should be used for a particular bridge, he or she should provide the Production Management Division's Structural Services manager with a written justification for the concrete diaphragms. Once the Structural Services manager concurs in the justification, such diaphragms should be detailed on the plans. The required quantities of concrete and reinforcing steel should be incorporated into those for the bridge deck.

Recurring Special Provision 707-B-172, attached hereto, should be called for beginning with the January 10, 2007, letting, if concrete diaphragms are detailed and are to be placed.

## **III. Reinforced-Concrete Interior Diaphragms Detailed, Structural-Steel Interior Diaphragms Permitted**

For a structure with plans at the Final Check Prints stage that show details for concrete interior diaphragms, and the designer has determined that steel diaphragms are acceptable, the diaphragm details should not be changed. The contractor will be permitted to substitute steel diaphragms for the concrete diaphragms. The substitution does not affect the bridge design.

Steel interior diaphragms are not a separate pay item. Their cost should be included in that of the concrete structural members. A note should be placed under the superstructure bill of materials which reads as follows:

“The Contractor will be permitted to substitute structural-steel diaphragms for the reinforced-concrete interior diaphragms. The estimated quantity of structural steel is \_\_\_\_\_. If the substitution is made, this quantity shall be placed in lieu of \_\_\_\_\_ of concrete class C in superstructure and \_\_\_\_\_ of epoxy coated reinforcing steel.”

Recurring Special Provision 707-B-171, and Recurring Plan Detail 707-B-173d, both attached hereto, should be called for beginning with the January 10, 2007, letting, if concrete diaphragms are detailed but steel diaphragms may instead be placed.

The appropriate recurring special provision and recurring plan detail, if required, should be called for through the August 22, 2007, letting. Beginning with the September 19, 2007, letting, the recurring special provisions will be incorporated into the INDOT *Standard Specifications*, and the recurring plan detail will be incorporated into the INDOT *Standard Drawings*. A provision and detail will then no longer be required to be called for in a specific contract.

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Attachments